What is claimed is:

1. An output circuit comprising:

an output transistor an emitter of which is grounded, a base of which serves as an input node for a control current and a collector of which serves as an output node;

a base current supply section for supplying a base current to the output transistor according to an input signal from the outside; and

a base current control section for detecting an inter-terminal voltage between the collector and emitter of the output transistor to control a base current supplied from the base current supply section so as not to cause the inter-terminal voltage to fall to a value lower than a predetermined voltage.

2. An output circuit according to claim 1, wherein

the base current control section is a comparator with the inter-terminal voltage and the predetermined voltage as a differential input.

3. An output circuit according to claim 1, wherein

the base current control section amplifies a first control current obtained by splitting the base current supplied from the base current supply section according to the inter-terminal voltage to generate a second control current and, by splitting the second control current from the base current, controls the base current supplied to the input node.

4. An output circuit according to claim 1, wherein

the base current control section supplies a first control current

obtained by splitting the base current supplied from the base current supply section according to the inter-terminal voltage to the output transistor as a collector current thereof to thereby control the base current supplied to the input node.

5. An output circuit according to claim 1, wherein

the base current control section splits a first control current obtained by splitting the base current supplied from the base current supply section according to the inter-terminal voltage into at least two currents and one of the two currents is amplified by an amplifier to generate a second control circuit and, by splitting the second control current from the base current and supplying the other current to the output transistor as a collector current thereof, controls the base current supplied to the input node.

6. An output circuit according to claim 1, wherein

the output transistor is an NPN transistor.

7. An output circuit according to claim 1, wherein

the output transistor is a PNP transistor.

8. An output circuit according to claim 2, wherein

the comparator is an NPN transistor.

9. An output circuit according to claim 2, wherein

the comparator is a PNP transistor.

10. An output circuit according to claim 3 or 5, wherein the amplifier is a current mirror circuit.

11. An output circuit according to claim 3 or 5, wherein the amplifier uses a current amplification action of a transistor.

12. An output circuit comprising:

an NPN output transistor an emitter of which is connected to a first power supply potential, a base of which serves as an input node for a control current, and a collector of which serves as an output node;

a PNP output transistor an emitter of which is connected to a second power supply potential, a base of which serves as an input node for a control current and a collector of which serves as an output node in common to the PNP output transistor and the NPN output transistor;

a first base current supply section for supplying a base current to the NPN output transistor according to an input signal from the outside;

a first base current control section for detecting a first inter-terminal voltage between the collector and emitter of the NPN output transistor to control a base current supplied from the first base current supply section so as not to cause the first inter-terminal voltage to fall to a value lower than a first predetermined voltage;

a second base current supply section for supplying a base current to the PNP output transistor according to the input signal; and

a second base current control section for detecting a second inter-terminal voltage between the collector and emitter of the PNP output transistor to control a base current supplied from the second base current supply section so as not to cause the second inter-terminal voltage to fall to a value lower than a second predetermined voltage.